WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 01P080

STATION NAME: Tenmile Cr. abv Barrett Lake

WATER YEAR: 2010

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Introduction

Watershed Description

Tenmile Creek is a lowland agricultural tributary that drains into the mainstem Nooksack River at river mile 7.0, and is the focus of management efforts to improve habitat and instream flows under the Comprehensive Irrigation District Management Plan (CIDMP) and WRIA 01 management. Tenmile Creek supports populations of coho, steelhead, chinook, and chum salmon as well as cutthroat trout.

Gage Location

The gage is located on private property near the West Laurel Bridge crossing approximately 2.8 miles from the confluence with the mainstem Nooksack River. The gage is accessible only from this property.

Table 1.

Drainage Area (square miles)	25.7
Latitude (degrees, minutes, seconds)	48° 51' 26" N
Longitude (degrees, minutes, seconds)	-122° 31' 42" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	33
Median Annual Discharge (cfs)	27
Maximum Daily Mean Discharge (cfs)	215
Minimum Daily Mean Discharge (cfs)	1.8
Maximum Instantaneous Discharge (cfs)	228
Minimum Instantaneous Discharge (cfs)	1.1
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	71
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	4.0
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	2

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

Peak flow for the water year occurred during a series of storms in late-November 2009. A series of September storms elevated the late summer 2010 flows to well above normal levels at 8-20 cfs.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	6.5%
Weighted Rating Error (% of discharge)	15.6%
Total Potential Error (% of discharge)	22.1%

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	13	14	
Period of Ratings	10/1/09 - 3/4/10	11/4/09 - 9/30/10	
Range of Ratings (cfs)	1.8 - 804	1.1 - 804	
No. of Defining Measurements	10	10	
Rating Error (%)	17.3%	14.9%	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

Only one rating shift occurred during water year 2010, an unusual low-end channel fill coupled with mid-range "scour" due to winter grass die-off. The resulting rating (Table 14) remained in effect for the rest of the water year.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	1.72
Maximum Recorded Stage (feet)	6.44
Range of Recorded Stage (feet)	4.72
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	0
Number of Days Qualified as Unreliable Estimates	0

Narrative

This station logged continuously throughout Water Year 2010 without interruption and with nominal pressure transducer drift.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	none
Range of Modeled Stage (feet)	
Range of Modeled Discharge (cfs)	
Valid Period for Model	
Model Confidence	

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
none	

Activities Completed

There was nothing of note.